

## CLAIMS

1. A medical lead, comprising:  
     a lead body having an insulator and at least one conductor, wherein the  
     insulator includes at least one welding region;  
     at least one conductive pad within the welding region, the conductive  
     pad electrically connected to the conductor; and  
     a band welded to the conductive pad to electrically connect the band to  
     the conductor.
2. A medical lead, as in Claim 1, wherein the welding region comprises a groove  
     cut in the insulator.
3. A medical lead, as in Claim 2, wherein the groove runs parallel to the  
     conductor.
4. A medical lead, as in Claim 1, wherein the conductive pad is electrically  
     connected to the conductor using a method selected from the group consisting of  
     welding, conductive adhesives, crimping.
5. A medical lead, as in Claim 1, wherein the conductive pad is composed of a  
     metal selected from the group consisting of stainless steel, MP35N, platinum, gold,  
     silver, copper and vanadium.
6. A medical lead, as in Claim 1, wherein the band is selected from the group  
     consisting of a band electrode, a band connector, and a sensor.
7. A medical lead, as in Claim 1, the band further comprising a plurality of  
     projections on an inner wall of a lumen, wherein the projections space the inner wall  
     from an outer surface of the lead body.

8. A medical lead, as in Claim 7, wherein at least three projections are positioned around the inner wall to center the lead body within the lumen.

9. A medical lead, comprising:

a lead body having an insulator and at least one conductor, wherein the insulator includes at least one welding region;

at least one elongated conductive element having a proximal end electrically connected to the conductor within the welding region; and

a band welded to the elongated conductive element to electrically connect the band to the conductor.

10. A medical lead, as in Claim 9, wherein the welding region comprises a groove cut in the insulator.

11. A medical lead, as in Claim 10, wherein the groove runs parallel to the conductor.

12. A medical lead, as in Claim 9, wherein the elongated conductive element is selected from the group consisting of wire, ribbon wire, and cable.

13. A medical lead, as in Claim 9, wherein the elongated conductive element is electrically connected to the conductor using a method selected from the group consisting of welding, crimping and conductive adhesives

14. A medical lead, as in Claim 9, wherein the elongated conductive element is composed of a material selected from the group consisting of stainless steel, MP35N, platinum, gold, silver, copper and vanadium.

15. A medical lead, as in Claim 9, wherein the band is selected from the group consisting of a band electrode, a band connector, and a sensor.

16. A medical lead, as in Claim 9, the band further comprising a plurality of projections on an inner wall of a lumen, wherein the projections space the inner wall from an outer surface of the lead body.

5 17. A medical lead, as in Claim 16, wherein at least three projections are positioned around the inner wall to center the lead body within the lumen.

10 18. A method for manufacturing a medical lead, comprising:  
cutting a welding region in a lead body to expose a conductor;  
securing a conductive pad within the welding region adjacent the conductor; and  
securing a band to the conductive pad to electrically connect the band to the conductor.

15 19. A method, as in Claim 18, wherein the welding region is cut with an excimer laser

20 20. A method, as in Claim 18, wherein the conductive pad is secured within the welding region by a method selected from the group consisting of welding, crimping and adhesives.

21. A method, as in Claim 19, wherein the band is secured to the conductive pad by welding with a yttrium-arsenic-garnet laser.

25 22. A method for manufacturing a medical lead, comprising:  
cutting a welding region in a lead body to expose a conductor;  
electrically connecting a proximal end of an elongated conductive element to the conductor within the welding region;  
positioning a band around the lead body and over the welding region;  
30 and  
electrically connecting a distal end of an elongated conductive element to the band.

23. A method, as in Claim 22, wherein the welding region is cut with an excimer laser.

5 24. A method, as in Claim 22, wherein the elongated conductive element is electrically connected within the welding region by welding.

25. A method, as in Claim 24, wherein the elongated conductive element is welded within the welding region with a yttrium-arsenic-garnet laser.

10 26. A method, as in Claim 22, wherein the elongated conductive element is electrically connected to the band by welding.

27. A method, as in Claim 26, wherein the band is welded to the elongated conductive element with a yttrium-arsenic-garnet laser.

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28. A band for a medical lead, comprising a plurality of projections on an inner surface of a lumen to provide clearance between a lead body and the inner surface for passage of one of a conductive pad or an elongated conductive element during assembly.

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29. A band, as in Claim 28, comprising at least three projections circumferentially spaced around the inner surface of the lumen.

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